

Calling Party Pays Case Study Analysis

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PCIA

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1. Executive Summary

The Strategis Group was retained by PCIA to collect and analyze five country case studies to understand the impact of Calling Party Pays. Two operators and the government regulator in Argentina, Chile, Germany, Mexico and the United Kingdom were interviewed. This information, along with The Strategis Group's analysis and recommendations, is summarized in this document.

The following companies and regulators were interviewed for this project:

Country	Operators	Regulator
Argentina	Unifón Movicom	CNC (Comisión Nacional de Comunicaciones)
Chile	CTC BellSouth Chile	Subtel
Germany	T-Mobil Viag Interkom	Regulatory Authority for Telecommunications and Post
Mexico	Telcel Iusacell	Cofetel
United Kingdom	BT Cellnet Vodafone	Office of Telecommunications (OFTEL)

1.1 Conclusions

- Subscribers, usage and ARPU tend to increase following the implementation of Calling Party Pays. However, the impact of CPP varies by country and may be attributed to a variety of additional factors, such as pre-paid introduction, digital expansion, special promotions, etc.
- The fixed line operator is always responsible for billing CPP calls. However, billing costs for CPP calls represents a minor incremental cost for the fixed line operator. While cellular operators receive less revenue per minute for CPP calls than for outgoing calls, increased usage usually offsets lower revenue per minute, leading to higher revenue per user.
- In all the countries studied, fixed line operators use metered billing for local service. Consequently, fixed line users are accustomed to fluctuating bills and are less sensitive to the additional charges of Calling Party Pays.
- In every country, regulators require some type of notification that the called party is a cellular user. Notification takes the form of special exchange or area codes assigned to cellular numbers.



- Calling Party Pays need not apply to every call; exceptions may include roaming, incoming long distance, and calls between cellular subscribers.

1.2 Calling Party Pays Regulation

In no country in this study, did the telecommunications regulator act independently to implement Calling Party Pays. Rather, the regulator acted more like a third party, assisting negotiations with the cellular and fixed line operators.

In each of the Latin American case studies, the Calling Party Pays rate is uniform, while in European countries, each cellular operator charges a different Calling Party Pays rate. In Latin America, all cellular and fixed line operators agreed on a rate together that applies to the entire country. In Europe, on the other hand, each cellular operator negotiated separately with fixed line operators to establish interconnection rates, resulting in a variety of Calling Party Pays rates and less transparency compared to Latin American markets.

1.2.1 Calling Party Pays Introduction & Characteristics

In Argentina, Chile and Mexico, cellular carriers originally operated in a Mobile Party Pays environment and implemented Calling Party Pays many years after cellular was introduced. In Germany and the UK, operators have been using a Calling Party Pays billing system since launching service.

Cellular Service and CPP

	Argentina	Chile	Germany	Mexico	UK
Service Launch	November 1989	March 1989	May 1986	October 1989	1985
CPP Launch	April 1, 1997	February 23, 1999	May 1986	May 1, 1999	1985

Even with Calling Party Pays billing, exceptions exist and Mobile Party Pays applies in some cases. In Germany and the UK, all calls except roaming calls (either domestic or international) fall under the Calling Party Pays billing system. CPP does not apply when cellular subscribers are roaming since the calling party is unaware of the location of the receiving party. In Germany and the UK, the fixed line caller pays the Calling Party Pays rate while the cellular subscriber pays for the roaming portion of the call. In Argentina, Chile and Mexico, the entire roaming call is Mobile Party Pays; the cellular user pays for the entire cost of the call. In addition, calls between cellular users continue to fall under Mobile Party Pays in Argentina and Chile.



Calling Party Pays and Mobile Party Pays Application

	Argentina	Chile	Germany	Mexico	UK
Between Fixed and Cellular	CPP	CPP	CPP	CPP	CPP
Between cellular subscribers of the same network	MPP	CPP	CPP	CPP	CPP
Between cellular subscribers of competing companies	MPP	MPP	CPP	CPP	CPP
Incoming Long Distance Calls	MPP	MPP	CPP	MPP	CPP
From Pay Phones	MPP	CPP	CPP	CPP	CPP
Call Forwarding	MPP	MPP	CPP	MPP	CPP
Roaming	MPP	MPP	MPP only for roaming portion	MPP	MPP only for roaming portion

Calling Party Pays is optional in Argentina, Chile and Mexico while CPP billing is mandatory in Germany and the UK (see below).

Calling Party Pays Availability, Sample Countries

Billing System	Argentina	Chile	Germany	Mexico	UK
CPP	Default	Default	Mandatory	Default	Mandatory
MPP	Optional	Optional	Unavailable	Optional	Unavailable

When Calling Party Pays was introduced in the Latin American countries in this study, operators automatically switched their entire subscriber base to Calling Party Pays. Subscribers have the option of switching back to Mobile Party Pays, although very few have chosen to do so.

1.3 Billing & Rates

Based on the interconnection agreements arranged between fixed and cellular operators, the Calling Party Pays rate differs in each country. The following table outlines Calling Party Pays rates for each country in this study.

Comparison of Calling Party Pays and Local Call Rates

	CPP Rate	Local Call
Argentina	\$0.35	\$0.04
Chile		
Peak	\$0.21	\$0.04
Off-Peak	\$0.13	\$0.01
Mexico	\$0.27	\$0.13
Germany		
Peak	\$0.49	\$0.05
Off-Peak	\$0.26	\$0.03
Weekends	\$0.26	\$0.02
UK (BT Cellnet)		
Peak	\$0.32	\$0.06
Off-Peak	\$0.31	\$0.02
Weekends	\$0.03	\$0.02
UK (Vodafone)		
Peak	\$0.48	\$0.06
Off-Peak	\$0.32	\$0.02
Weekends	\$0.16	\$0.02

Calling Party Pays rates differ significantly by country and operator, and in most cases the Calling Party Pays rate is considerably higher than the local fixed rate. One major exception is weekend rates for BT Cellnet, which only cost \$0.03 per minute for calls placed to cellular users compared to US\$0.02 for a fixed local call. However, on average, the Calling Party Pays rate is nearly nine times as much as a local call.

Interconnection agreements between operators dictate the portion of revenue from Calling Party Pays distributed to the fixed line and cellular operator. In each case study, the fixed line operator is responsible for billing the caller each time a call is placed to a cellular subscriber using Calling Party Pays. Cellular operators always receive their share of Calling Party Pays revenue as collections are the responsibility of the fixed line operator.

In Latin America, there were long negotiations between cellular and fixed operators in order to agree on a rate that was fair to both parties. In Mexico, before all cellular operators and Telmex approved the US\$0.27 (Ps\$2.50) Calling Party Pays rate, operators negotiated for over a year to concur on a rate. Even after the agreement, Iusacell feels that the US\$0.06 (Ps\$.60) that Telmex receives is too high, and as a result Calling Party Pays will not generate as large an increase in usage levels that could be possible at a lower rate. Cofetel will review the Calling Party Pays system after six months to consider adjusting the tariff.



Distribution of CPP Revenue per Minute, Latin American Countries

	Argentina	Chile		Mexico
		Peak	Off-Peak	
Fixed to Mobile	\$0.35	\$0.21	\$0.13	\$0.27
Cellular Operator's Portion	\$0.33	\$0.17	\$0.12	\$0.21
Local Operator's Portion	\$0.02	\$0.04	\$0.01	\$0.06

In Europe, revenue distribution of Calling Party Pays is not standard in each country as operators have many interconnection agreements. Operators would not disclose the revenue distribution of Calling Party Pays.

1.3.1 Roaming

The billing of calls placed to cellular subscribers that roam outside of their home region differ in Latin America and Europe. In Argentina, Chile, and Mexico all calls made to a subscriber that roams fall under the Mobile Party Pays system; the cellular subscriber pays the entire cost of the call and the fixed line caller is not charged an additional fee above the price of the local call. In Europe, when a subscriber roams outside of his/her home region, the cellular subscriber pays for the roaming charge while the fixed line caller is charged the Calling Party Pays rate.

In Europe, international roaming procedures are fairly similar. Operators establish bilateral roaming contracts and negotiate the level of wholesale network charges that the corresponding roaming party will pay to the host network. A typical breakdown of the charges for a roaming subscriber in Europe is as follows:

- Incoming calls: roaming charge set by the home network
administrative surcharge of the host network (10-20%)
+ tax (15-20%)
- Outgoing calls: charge set by the host network (depends on the type of call)
+ home network mark-up (20-25%)
+ tax (15-20%)

Generally, in Europe, roaming charges between operators are not transparent. On the wholesale level, operators establish bilateral roaming agreements and determine the level of network charges while on the retail level, the level of charges imposed by the home and host operator vary. The largest portion of revenue earned from roaming is retained by the subscriber's home operator, however the roaming host network also adds administrative surcharges. Operators in the case study would not disclose the revenue distribution of roaming charges.



1.4 Problems

1.4.1 Customer complaints

Customer complaints due to Calling Party Pays have only been logged in Mexico, by Telmex and Telcel customers. Telmex customers were upset about new charges that were accrued from calls placed to cellular phones who were not accustomed to paying a fee for calls to cellular subscribers. Telcel received complaints from some of its cellular subscribers that wanted to change their pricing plan after Calling Party Pays was implemented. Many of Telcel's subscribers chose pricing plans which included a substantial amount of bundled minutes. These subscribers wanted to receive a lot of calls, and therefore choose a plan with more included minutes that they would use for outgoing calls. When Calling Party Pays was passed in May, these subscribers found themselves with extra minutes each month that they would now have to use for outgoing calls or otherwise go unused. These subscribers requested to change their pricing plan to one that includes fewer bundled minutes but in many circumstances users were locked into a fixed contract, unable to change their pricing plan.

1.4.2 Technical problems

Argentina and Mexico experienced technical problems soon after Calling Party Pays was implemented. Argentina experienced a large increase in demand for cellular service immediately after Calling Party Pays was first implemented which affected the quality of some calls. Operators did not have adequate capacity to handle the increase in traffic that resulted soon after Calling Party Pays was implemented. This problem was solved when operators upgrading their infrastructure to digital technology.

In Mexico, prior to implementing Calling Party Pays, Telcel had to reconfigure its network in order to handle incoming calls. No problems were experienced by the operator's contract subscribers. Due to problems for pre-paid subscribers, the operator prevented incoming calls for pre-paid subscribers for six months prior to the introduction of Calling Party Pays. Originally, the reconfiguration was to last one month, however, in order to bill fixed line callers for calls made to pre-paid subscribers, Telcel altered the billing mechanism that was originally implemented in 1996. The infrastructure caused difficulties which prevented incoming calls for longer than expected.

Iusacell also experienced technical problems during the first few days after Calling Party Pays was implemented. Some of Iusacell's outgoing calls were not completed due to one of Telmex's switches that failed to recognize the Calling Party Pays prefix (044). This problem was resolved and no further technical problems have been reported.



1.5 Notification

Because Calling Party Pays requires an additional fee from fixed line callers, cellular numbering is distinguishable from fixed line numbers. Regulators either establish a special area code or exchange for cellular numbers.

Operators in the UK and Germany always offered Calling Party Pays; there was no need for a separate prefix for cellular phones nor a formal notification to the calling party. However, numbering for cellular users is different from landline numbers and callers are generally aware that calls to cellular subscribers will be billed at a higher rate than a local call.

In Argentina, Chile, and Mexico, there is a special prefix for cellular subscribers that was added to all cellular numbers when Calling Party Pays was implemented. For a few months after introducing Calling Party Pays, Argentine operators played a pre-recorded message every time a user called a cellular subscriber to notify of the extra cost of the call. The message was eliminated after a few months as Argentines became accustomed to the new tariff. In Mexico, Cofetel (the regulator) launched an ad campaign in late February to expand awareness of the new Calling Party Pays charge. According to Cofetel, the campaign increased awareness of the Calling Party Pays prefix.

Prefix Codes, Calling Party Pays

Argentina	Chile	Germany	Mexico	UK
15	09	No prefix, all cellular numbers are identifiable	044	Cellular numbers start with 08 or 07

1.6 Subscribers, Usage & Revenue

Latin American operators interviewed in this study attributed some or all of subscriber growth to Calling Party Pays (see table). Many operators in Latin America believe that subscriber increases are due to a combination of both Calling Party Pays and new pricing schemes, such as pre-paid. In Europe, since CPP has existed since cellular service launched, the impact on subscribers can not be measured. Average usage levels have been declining for the ten operators interviewed, primarily as a result of increasing penetration of lower usage segments. However, Calling Party Pays has resulted in an increase in usage for Latin American operators. This increase may not be sustainable if cellular/PCS service continues penetrating lower usage segments.

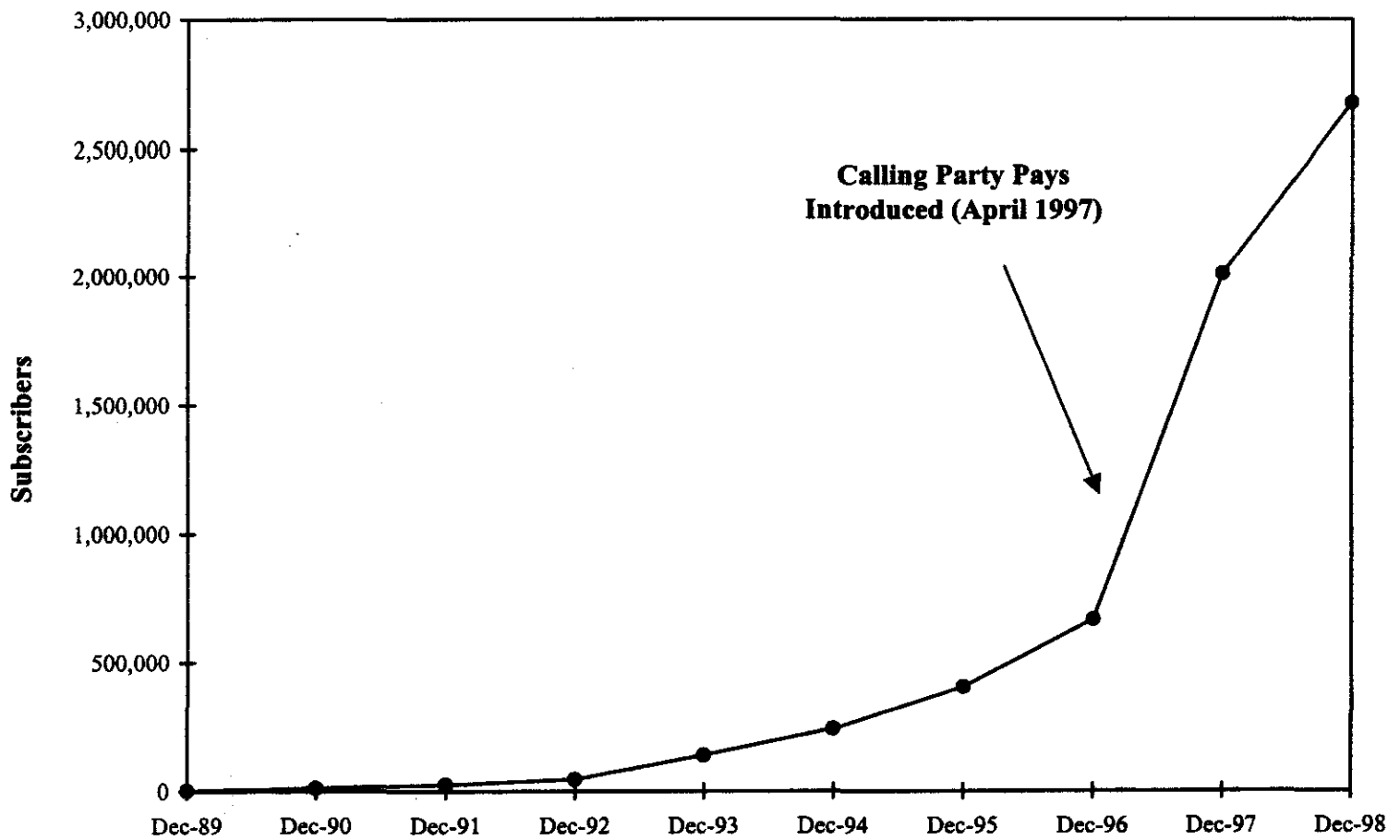


Opinion Summary

Operator	Affect on Subscribers	Affect on Usage
Latin America		
Unifón (Argentina)	Positive influence due to CPP; STOP plans and automatic debit plans as well	Decreasing due to targeting lower income segments
Movicom (Argentina)	CPP had a strong influence	CPP more significant for pre-paid users
CTC Chile	Pre-paid and CPP	Positive affect, more significant for pre-paid users
BellSouth Chile	Mostly Pre-Paid, CPP lowered the cost of pre-paid plans	Has been decreasing due to pre-paid, should increase due to CPP
Telcel (Mexico)	Combination of pre-paid and CPP	Will increase in the future due to CPP
Iusacell (Mexico)	Will increase due to CPP	Will be more significant for low end users
Europe		
T-Mobil (Germany)	Increasing as targeting lower end users	Decreasing due to lower usage segments
Viag (Germany)	Increasing as targeting lower end users	Decreasing due to lower usage segments
Vodafone (UK)	Has increased due to lower prices	Has increased due to lower prices
BT Cellnet (UK)	Has increased due to lower prices	Has increased due to lower prices

1.6.1 Subscriber Growth

In most cases, subscribers increase following the implementation of Calling Party Pays. Argentina, for example, experienced very rapid subscriber growth immediately after Calling Party Pays was introduced; over 200% growth in 1997 (see figure below).

Cellular/ PCS Subscribers, Argentina: December 1989 - December 1998

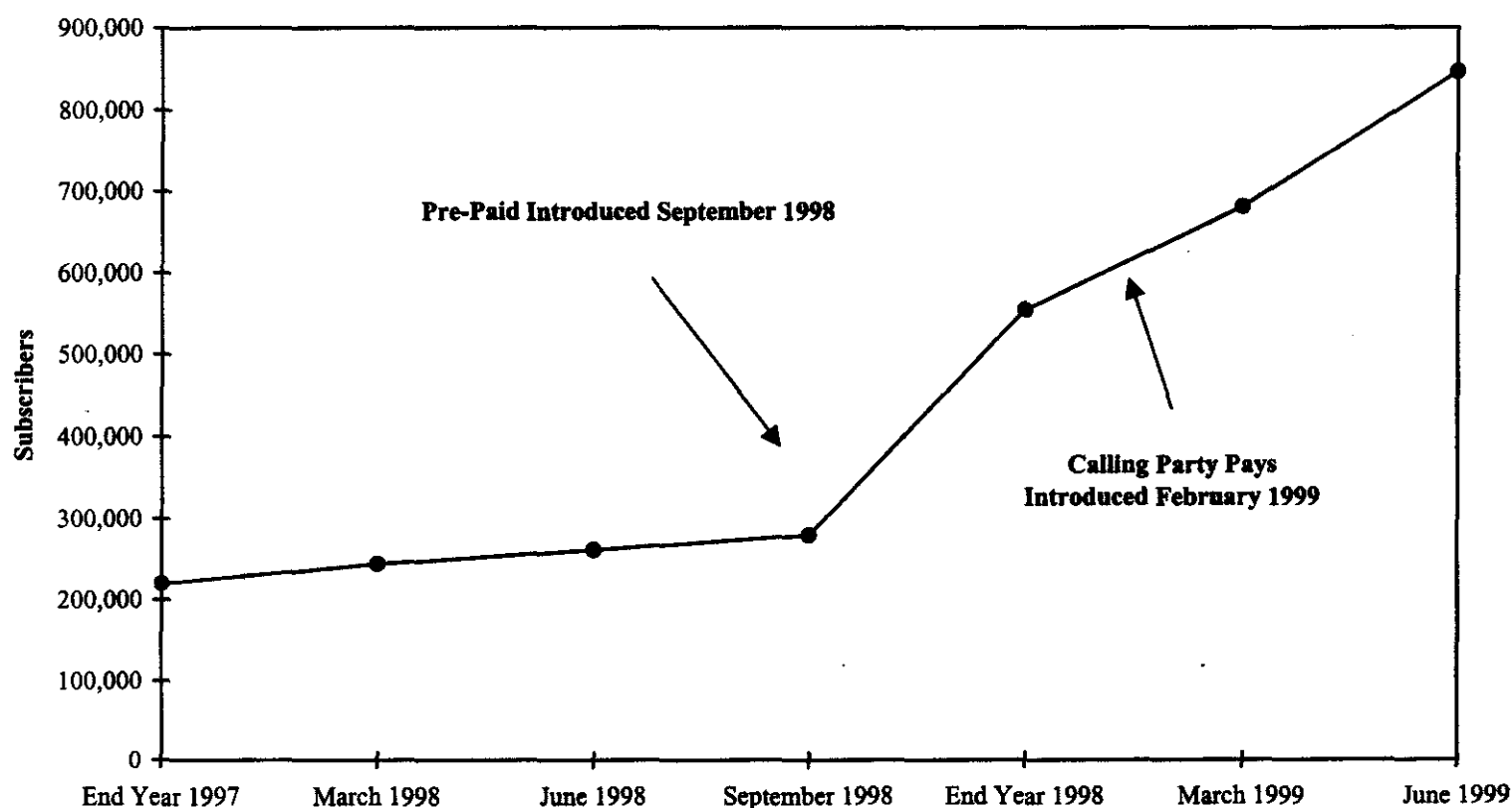
Source: The Strategis Group



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While pre-paid cellular plans only account for about 9% of the US cellular/PCS subscriber base, over 20% of Latin America's subscriber base is currently using pre-paid plans. In the UK, pre-paid accounts for 8% of the subscriber base while in Germany, pre-paid subscribers account for 12% of the total base. By offering users flexible spending rather than obligatory fixed payments for contract service, pre-paid attracts large segments of the population that previously could not afford cellular contract plans. In Latin America, the introduction of pre-paid has resulted in significant increases in subscriber growth for cellular services. Operators in Chile and Mexico attribute subscriber increases to both CPP and pre-paid. CTC Chile, for example, experienced a 99% increase in its subscriber base in the first quarter after introducing pre-paid cellular, compared to a 24% subscriber increase during 2Q 1999 (the first full quarter that Calling Party Pays was available) (see below).

Cellular/ PCS Subscribers, CTC Chile: December 1997- June 1999



Source: The Strategis Group

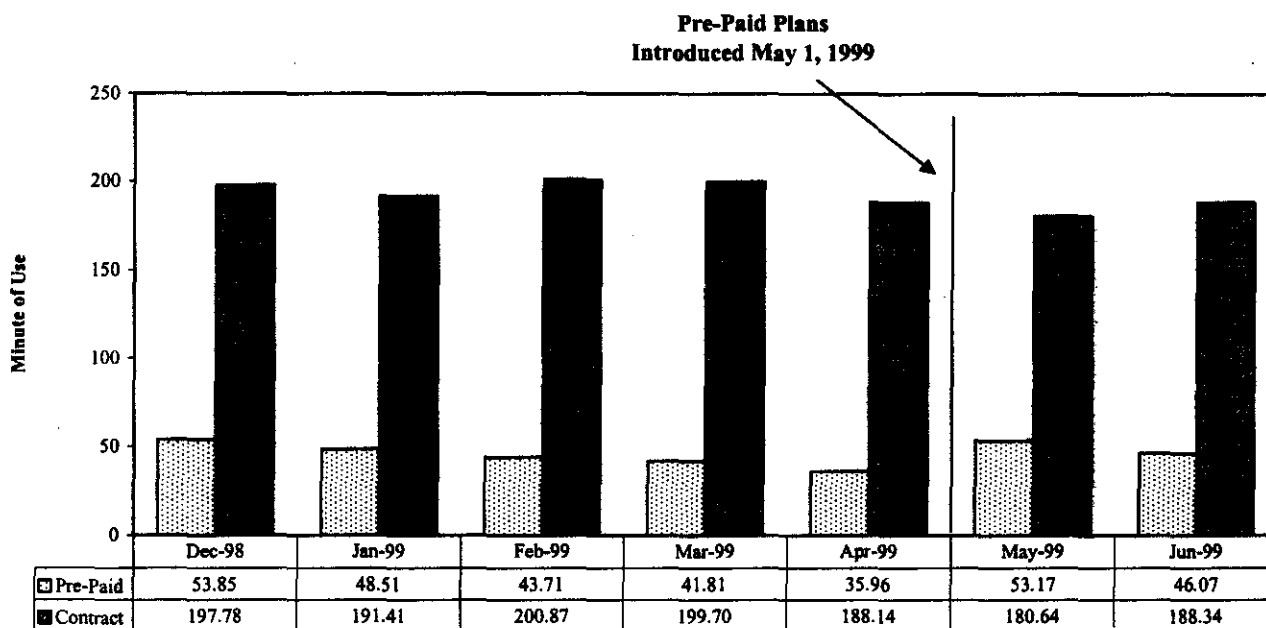


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1.6.2 Usage

Although usage and ARPU tend to increase and never decline when Calling Party Pays is implemented, cellular operators are also penetrating lower usage segments of the population. This is particularly the case for German operators T-Mobil and Viag, BellSouth Chile, and Unifón (Argentina). For Telcel Mexico, Calling Party Pays has held usage levels steady for pre-paid and contract subscribers, even as the operator attracts lower end users by expanding pre-paid programs.

Average Monthly Minutes of Use, Pre-Paid and Contract

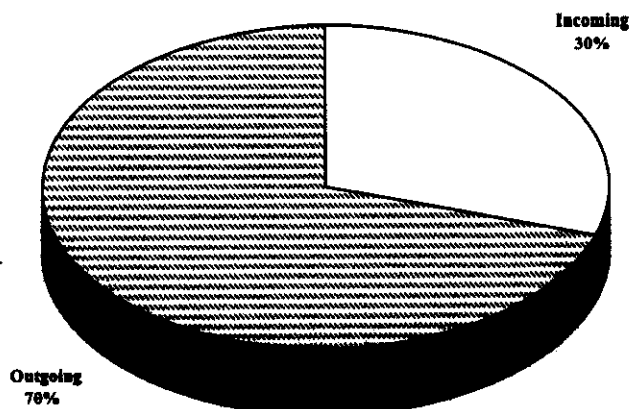


Source: The Strategis Group

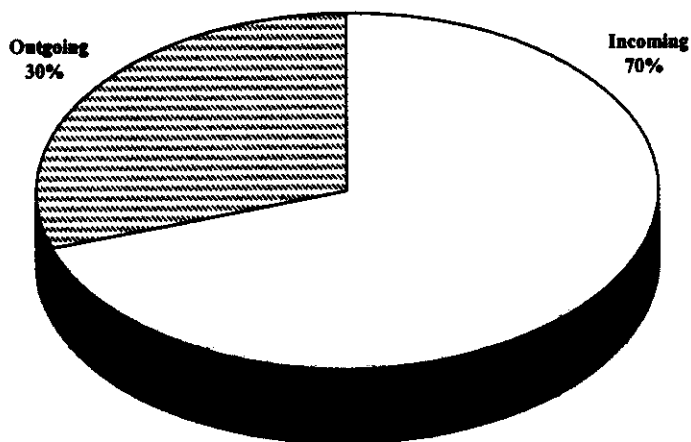
The introduction of Calling Party Pays often alters the incoming/ outgoing ratio of monthly minutes of use. Contract users are less price sensitive and will continue to use their cellular phone as they did prior to Calling Party Pays. Pre-paid users tend to alter their behavior after Calling Party Pays is implemented. For example, Calling Party Pays stimulated CTC Chile's usage for pre-paid subscribers and transformed the incoming/ outgoing ratio from 30% incoming/ 70% outgoing at end year 1999 to the current ratio of 70% incoming/ 30% outgoing (see figures below).



**Incoming/ Outgoing Minutes of Use,
Pre-Paid Subscribers;
CTC Chile: December 1998 (Prior to CPP)**



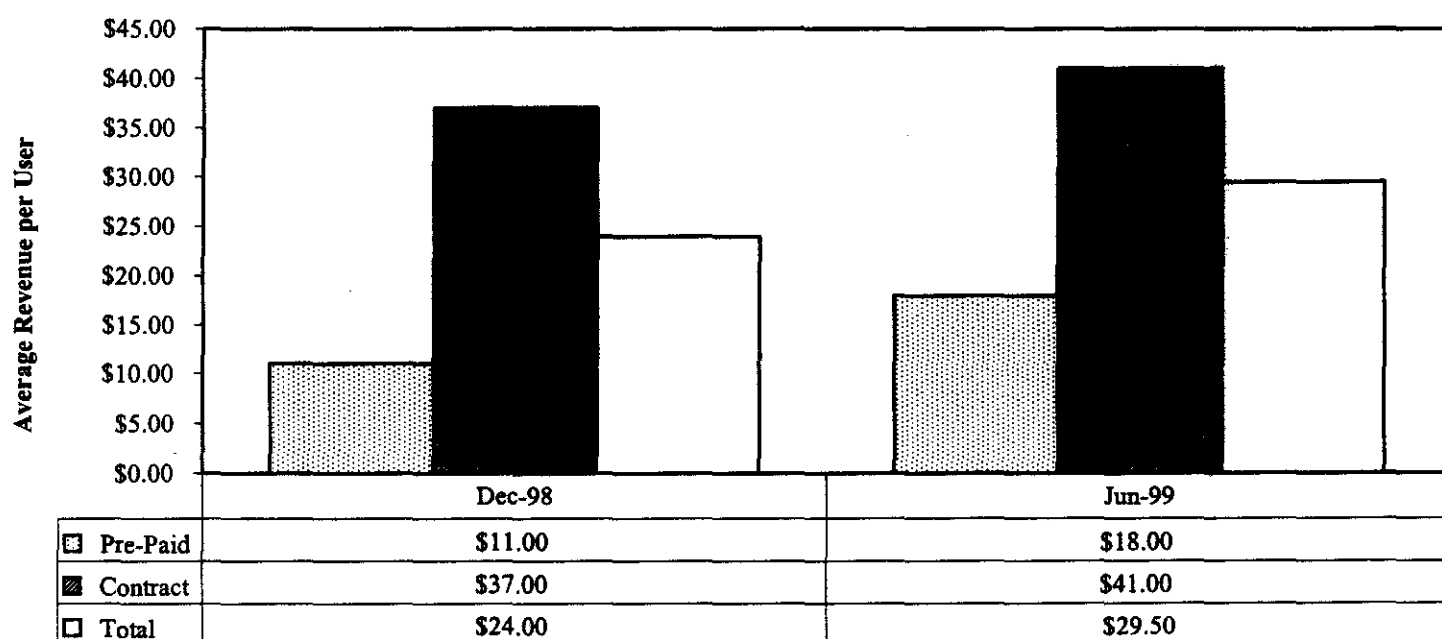
**Incoming/ Outgoing Minutes of Use,
Pre-Paid Subscribers;
CTC Chile: June 1999 (After CPP)**



1.6.3 ARPU

As operators penetrate lower usage segments of the population, Average Revenue Per User has been falling for most operators. With Calling Party Pays, cellular operator's average revenue per minute for incoming calls decreases as the cellular operator must share revenue with the fixed line operator. In order for ARPU to increase, average incoming monthly minutes of use must increase enough to offset the lower average revenue per minute. In addition, outgoing minutes of use tends to increase as cellular subscribers make more outgoing calls yet pay similar monthly fees as prior to Calling Party Pays. For example, CTC Chile, even with the expansion of pre-paid programs, increased total average monthly revenue by 23% from the end of 1998 compared to mid year 1999. The operator attributes increased usage (both incoming and outgoing) to Calling Party Pays.

ARPU, CTC Chile



Source: The Strategis Group



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2. Argentine Case Study

2.1 Background Information

Country: Argentina

Operators:

<p>Movicom www.movi.com.ar</p> <p>Cristian Columbe Director, Marketing Tucuman 744, Piso 2 Buenos Aires, 1049 Phone: (54-11) 4321-5006, ex. 2157 Ccolumbe@crm.com.ar</p> <p>Pablo Gomez Director, Finance Phone: (54-11) 4321-5006, ex. 2460 Gomez_p@crm.com.ar</p> <p>Ignacio Arial Pricing Department Phone: (54-11) 4321-5006, ex. 2322</p>	<p>Unifón www.unifon.com.ar</p> <p>Maximiliano Zorzi Director, Operations Carlos Pellegrini 1149 2° (1009) Buenos Aires Argentina Phone: (54-11) 4819-4376 MZorzi@unifon.com.ar</p> <p>Anae Siburu Analyst, Calling Party Pays Finance Department Phone: (54-11) 4819-3815 Asiburu@unifon.com.ar</p>
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Regulator

<p>CNC (Comisión Nacional de Comunicaciones) www.cnc.gov.ar</p> <p>Sergio Scarabino Perú 103 Buenos Aires, Capital Federal, 1067 Phone: (54-11) 4 347 9553 Fax: (54-1) 347 9546 Sscarabino@cnc.gov.ar</p>



2.2 CPP Regulation

Calling Party Pays was implemented in Argentina on April 1, 1997. The Calling Party Pays system only applies to all local calls made to cellular phones except from pay phones; the Mobile Party Pays system continues to apply to incoming long distance calls, calls between cellular phones, and calls from pay phones. In addition, call forwarding (when a cellular user has his/her calls forwarded to another number) and when a cellular subscriber roams outside of his/her home region use the Mobile Party Pays billing system; the cellular subscriber pays for the entire cost of the call and the fixed line caller does not pay an additional fee above the price of the local call. All cellular operators in Argentina were required to implement Calling Party Pays and subscribers for both Movicom and Unifón were switched automatically to the Calling Party Pays pricing scheme on April 1, 1997, with the choice to switch back to Mobile Party Pays if they so desired.

CPP is optional in Argentina; however according to CNC, the entire cellular subscriber base in Argentina has chosen Calling Party Pays. At the end of 1997, 10% of the subscriber base in Argentina chose to remain on the Mobile Party Pays system, but by the end of 1998 all users had switched to Calling Party Pays. The original Calling Party Pays legislation stated that cellular operators should question new subscribers which billing method they would prefer. Currently, however, operators automatically place new subscribers on the Calling Party Pays system.

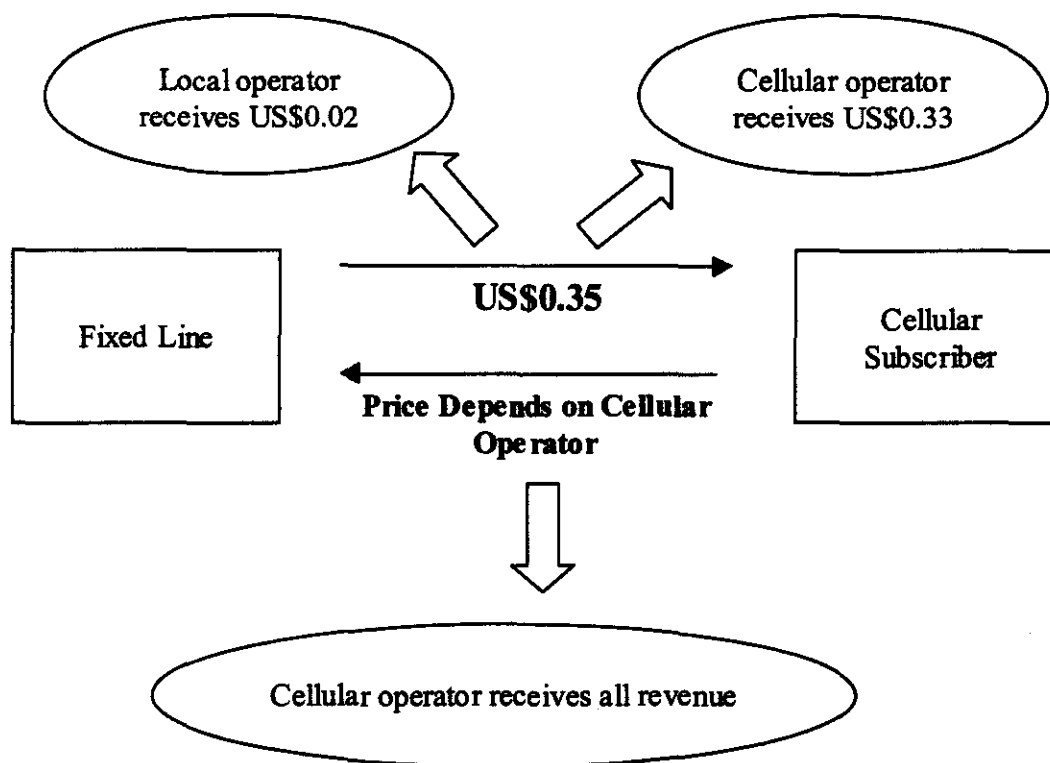
Calling Party Pays between cellular users was to be implemented in July 1998, but was delayed by cellular operators Movicom and Unifón. The operators were unwilling to apply the Calling Party Pays rate of US\$0.35 per minute for calls between cellular users, for fear that clients would avoid using their cellular phones. An undisclosed tariff was to be agreed upon by June, 1999 but according to CNC, Movicom was not satisfied with the rate. An agreement is expected to be signed by November 1999. Both Movicom and Unifón are technically prepared for Calling Party Pays between cellular users.

2.3 Billing Requirements and Issues

Interconnection agreements manage Calling Party Pays billing between fixed and cellular operators. The Calling Party Pays rate in Argentina is US\$0.35, as outlined below:



Calling Party Pays Revenue Distribution, Argentina



Cellular operators can not charge less for calls that terminate within the same cellular network, compared to calls between cellular operators. There is competition for cellular pricing and each operator in Argentina has subscribers that are charged different rates; however, there can be no difference in the price of the call, depending where it terminates. CNC considers such a difference discriminatory pricing and has mandated cellular operators to charge identical tariffs for all types of calls; whether they terminate within the same network or terminate in another operator's network.

Telefonica and Telecom are responsible for billing the fixed line user each time a Calling Party Pays call is made to a cellular subscriber. If a fixed line user utilizes another local operator, Telefonica or Telecom continue to collect Calling Party Pays tariffs, however, the revenue is collected by the local operator, then distributed to Telefonica or Telecom and finally given to the appropriate cellular operator.

Due to multi-year arrangements that were signed when operators launched service, Telefonica currently carries Unifón's and Movicom's long distance and local traffic, and is responsible for obtaining the appropriate revenue from the cellular operators. Unifón will offer its subscribers a choice in long distance service in the future between Telecom, Telefonica, CTI, and Movicom.

Movicom plans to carry its own long distance traffic in the future, as the operator was recently granted a concession to offer long distance service throughout Argentina.

Interconnection agreements manage Calling Party Pays in Argentina. Each month, revenues are distributed to the appropriate parties according to the interconnection agreements.

The CNC assisted in the negotiations to agree on the US\$0.35 tariff for Calling Party Pays. Although there were disagreements over the portion of the tariff to be granted to the fixed line operator, Telefonica and Telecom agreed to the US\$0.02 rate to compensate the company for billing functions.

New infrastructure was not necessary to implement Calling Party Pays billing; however, Movicom and Unifón purchased new infrastructure to handle the increase in traffic that resulted soon after Calling Party Pays was implemented.

2.4 Difference Between Cost of Landline and Wireless Calls

2.4.1 Landline to Mobile

The CNC (Comisión Nacional de Comunicaciones) approved the Calling Party Pays tariff and continues to approve tariffs for local and long distance service. In the past, the CNC actually set tariffs, but moved away from setting rates in 1998 with the liberalization of telecommunication services in Argentina. The Calling Party Pays rate is US\$0.35, which compares to the average US\$0.04 rate that Argentines pay for a local call.

2.4.2 Movicom & Unifón

Movicom collects a higher rate per minute for outgoing calls, compared to Miniphone, operating in the same region. This is primarily due to Movicom's larger proportion of pre-paid subscribers. Unifón does not charge the same subscriber less for calls outside of the operator's network; but rather has many high end users who pay less per minute than their low end counterparts, and they tend to call many cellular subscriber's on Unifón's competitor's networks.

Service Pricing, Movicom & Unifón (US\$, plus tax)

Type of Call	Movicom	Unifón
Mobile-to-landline	\$0.35	\$0.20
Mobile-to-mobile (average, within same network)	\$0.35	\$0.33
Mobile-to-mobile (average, outside of operator's network)	\$0.35	\$0.20



2.5 Problems or Issues Reported by Carriers

2.5.1 Technical

According to the CNC, when Calling Party Pays was first implemented there was a large increase in demand for cellular service which affected the quality of some calls. Operators did not have adequate capacity to handle the increase in traffic that the operators experienced. This problem was solved by operators upgrading their infrastructure to digital technology.

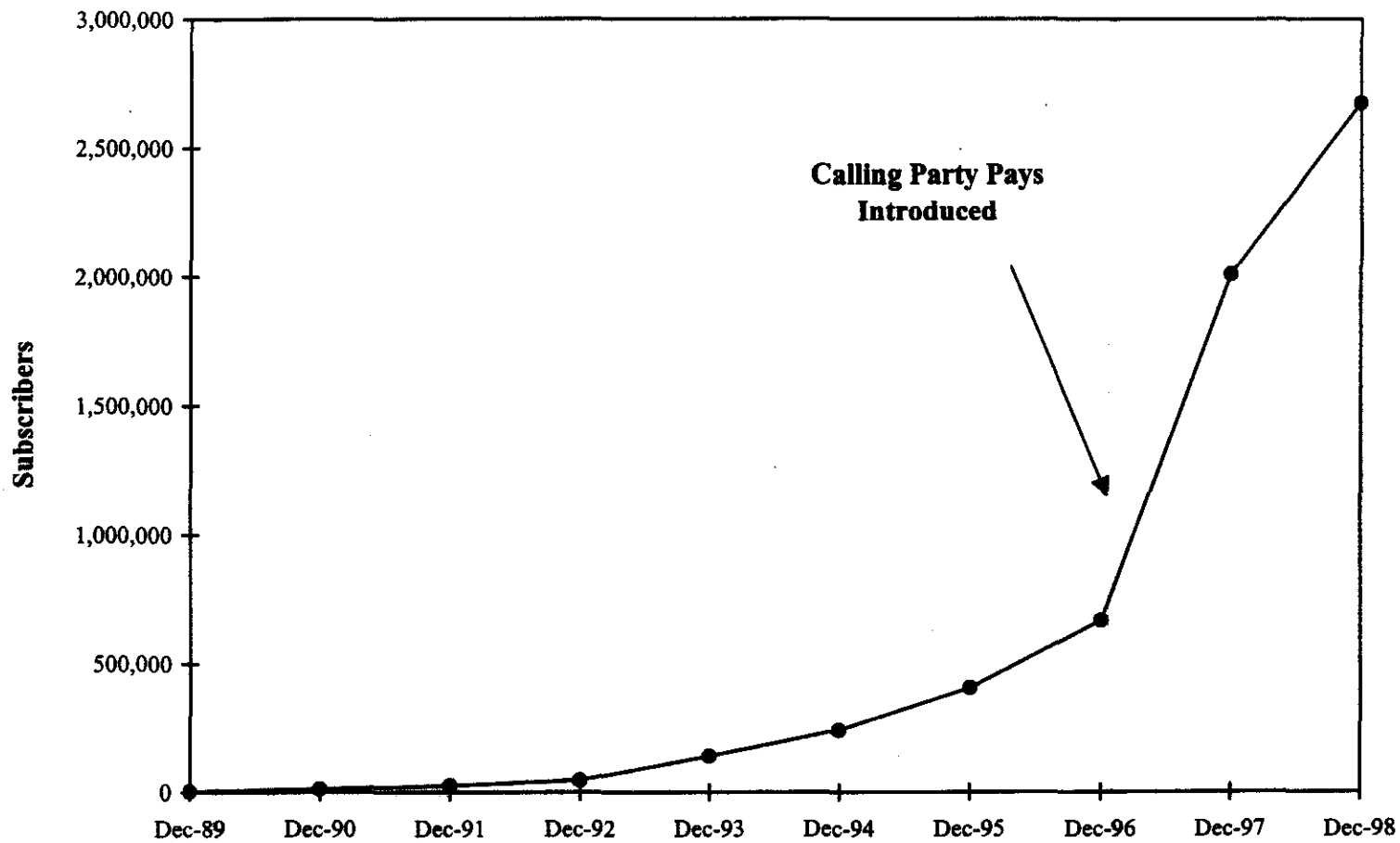
2.6 Notification or Awareness of Cost of Call

The area code (15) is assigned to all cellular phones (all Argentine cellular subscribers use Calling Party Pays). When Calling Party Pays was implemented, the area code was added to all existing cellular numbers. In addition, when Calling Party Pays was first introduced, a message indicated that the call would be charged a higher tariff than a local call. However, the voice message was eliminated after a few months as Argentines became accustomed to the Calling Party Pays tariff. Calling Party Pays calls are currently automatically completed with no indication to the user that the call will be charged a higher tariff.

2.7 Subscribers and Usage

Argentina experienced very rapid subscriber growth immediately after Calling Party Pays was introduced; over 200% growth in 1997 (see figure below). According to Sergio Scarabino of the CNC, this growth was entirely due to Calling Party Pays. Calling Party Pays lowered the cost of service, which resulted in an increase in subscribers and average minutes of use per user throughout Argentina (see below).





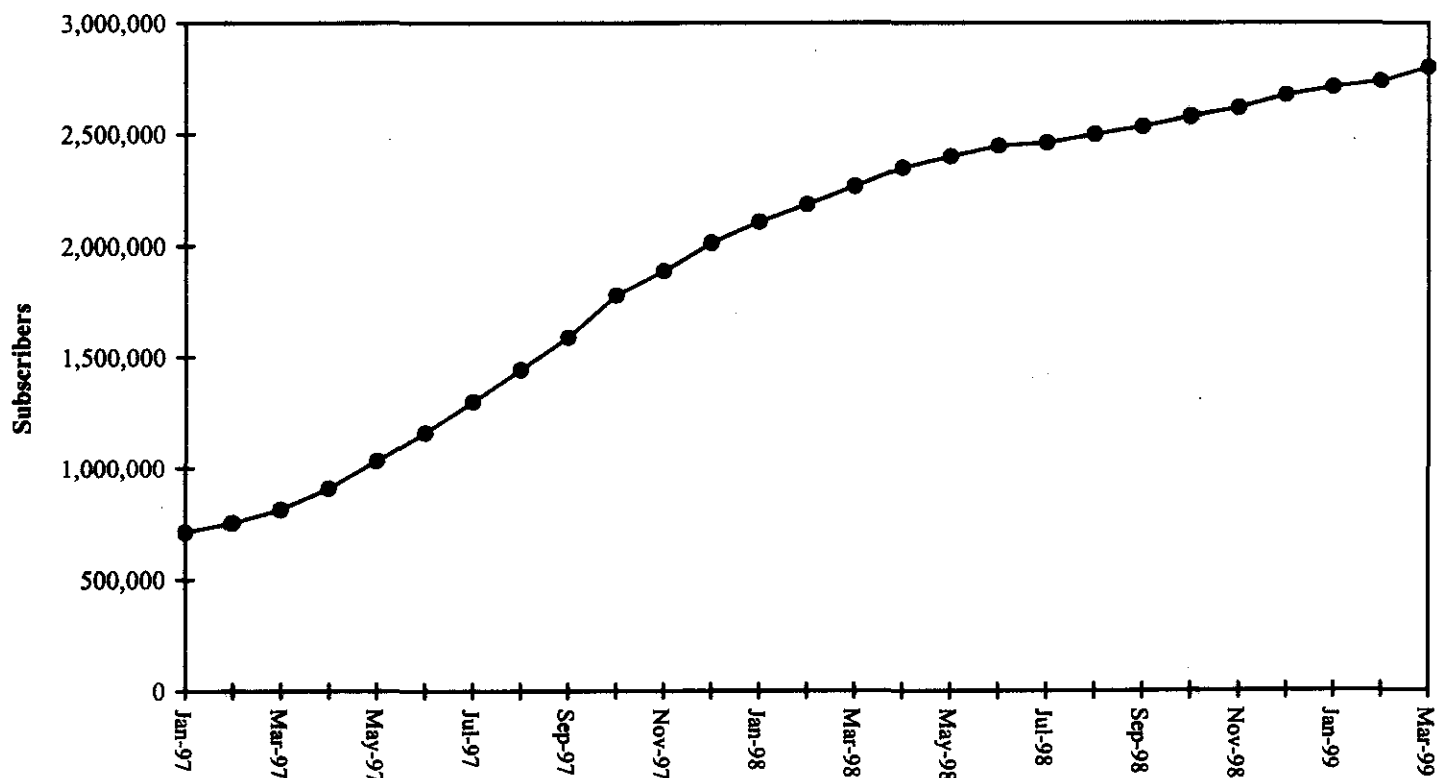
Source: The Strategis Group



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The impact of Calling Party Pays on subscriber growth appears to have lasted about nine months before the market adjusted to a slower growth rate in January 1998 (see below).

Subscriber Growth, Argentina: January 1997- March 1999



Source: The Strategis Group



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2.7.1 Unifón

According to Anae Siburu of Unifón, Calling Party Pays heavily influenced strong subscriber growth for Unifón in 1997 and 1998. However, other factors to consider include STOP plans and automatic debit plans. STOP plans are cellular plans which controls usage under a certain amount of minutes per month. Unifón found that these pricing plans attracted new customers (students, lower middle class) that preferred to control spending on cellular service. Automatic debit plans decreased the number of cellular subscribers disconnected due to bad credit.

Average minutes of use per user has been declining for Unifón over the past few years as the operator has penetrated lower usage segments of the population. Unifón's competitor CTI launched cellular service in late 1994 and has successfully penetrated upper income/ high usage segments of the population. When Unifón launched service in March 1996, the operator targeted middle class professionals who were mostly medium to high end users. With time, Unifón began to target their marketing efforts towards lower economic segments of the population. This occurred at the same time as Calling Party Pays was passed.

Both Calling Party Pays and new marketing strategies resulted in Unifón's subscriber base increasing 334% from September 1996 to September 1997. In addition, Unifón recently launched pre-paid (May 1999), which accounted for 81% of net additions in June and 71% in July. Pre-paid users, who tend to use their cellular phones less than contract subscribers, accounted for the drop in average minutes of use and ARPU at the end of June 1999.

Users and Growth

Subscribers, Unifón

	Users	Growth rate
September 1996	31,061	
Calling Party Pays Implemented: April 1997		
September 1997	134,856	334%
September 1998	220,577	64%

Usage and Revenue

Minute of Use and ARPU, Unifón

	Average MOU per Month			ARPU		
	Incoming	Outgoing	Total	Incoming	Outgoing	Total
September 1997	94	86	180	\$25.20	\$74.40	\$99.60
September 1998	92	84	176	\$25.17	\$74.38	\$99.55
June 1999	83	71	155	\$27.60	\$62.54	\$90.14



2.7.2 Movicom

According to Cristian Columbe of Movicom, Calling Party Pays directly resulted in Argentina's robust subscriber growth. In addition, the operator experienced an increase in total traffic, primarily due to a large increase in incoming traffic. Calling Party Pays has positively affected usage levels for low end users more significantly than for medium end users. This is due to a change in usage patterns for low end users; they decreased outgoing minutes and encouraged other people to call them.

Average incoming minutes of use per user have increased for Movicom since Calling Party Pays was implemented; however, average outgoing minutes of use per user has decreased as the operator has penetrated lower usage segments. The lower outgoing minutes of use has brought total average minutes of use per user down over the past few years, decreasing ARPU as well. Movicom's aggressive marketing of pre-paid programs to lower usage segments has negatively affected the company's ARPU while increasing the company's subscriber base (131% growth in 1997 and 44% in 1998).

Users and Growth

Subscribers, Movicom

	Users
End Year 1995	180,367
End Year 1996	272,996
Calling Party Pays Launched : April 1997	
End Year 1997	631,513
End Year 1998	908,895
March 1999	962,274
June 1999	1,003,077

Usage and Revenue

ARPU, Movicom

	ARPU
End Year 1996	\$118.73
End Year 1997	\$110.17
End Year 1998	\$ 81.03
March 1999	\$ 71.95



3. Chilean Case Study

3.1 Background Information

Country: Chile

Operators:

CTC Chile www.ctc.cl Marcela Moya Director, Marketing Providencia 111 Santiago, Chile Phone: (562) 691-3867 Fax: (562) 691-2392 mamoya@ctc.cl	BellSouth Chile www.bellsouth.cl Maya Sillas Marketing Avenida El Bosque Norte 134 Las Condes Santiago, Chile Phone: (562) 339 4072 Msillas@bellsouth.cl Fernando Vergara Director, BellSouth Cellular Phone: (562) 339-5222 ffvergarra@bellsouth.cl
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Regulator

Subtel Miguel Vergera Amunategui 139, Piso 5 Centro Santiago, Chile Phone: (56-2) 421 3520 Fax: (56-2) 421-3508
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3.2 CPP Regulation

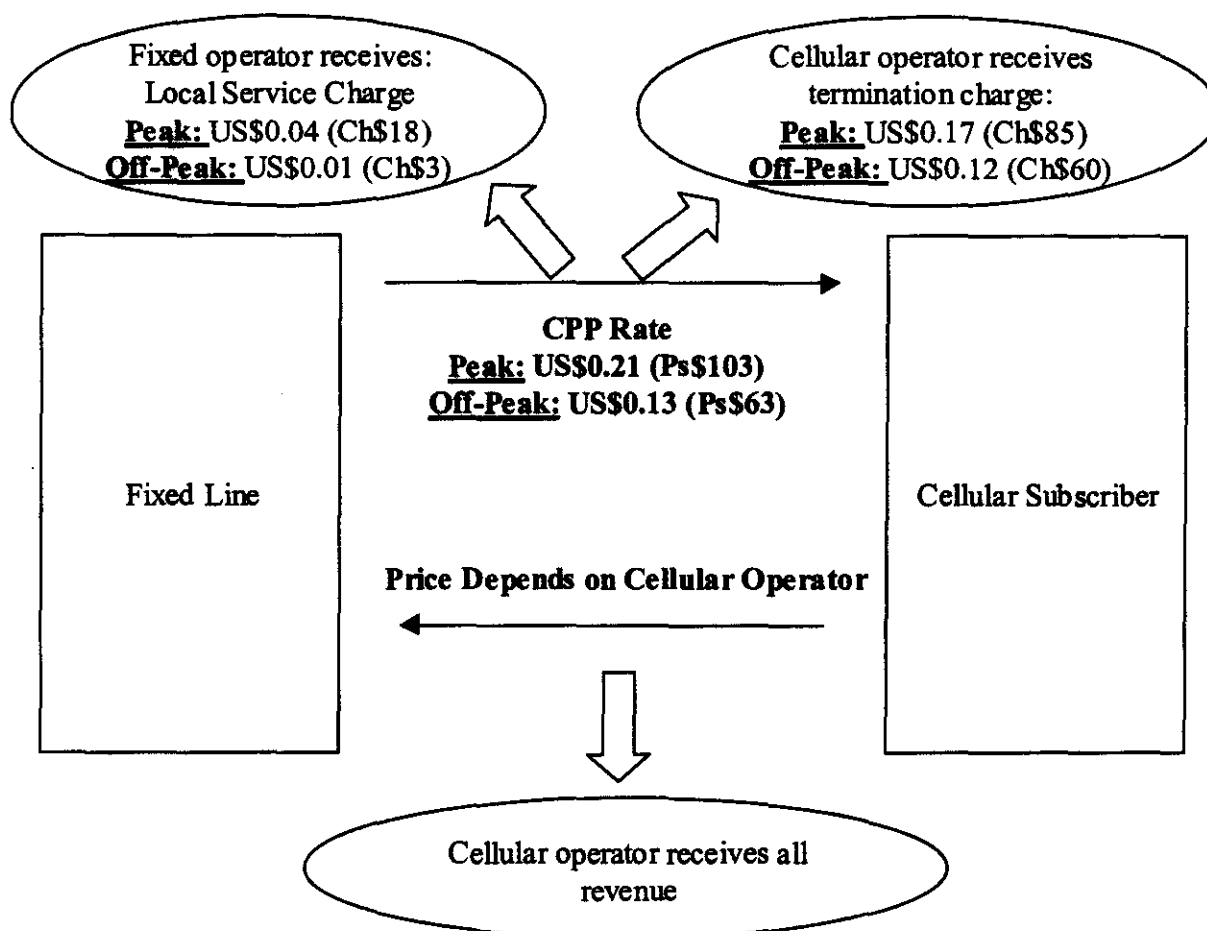
Calling Party Pays started in Chile on February 23, 1999. The system only applies to fixed-to-cellular calls; the Mobile Party Pays system continues to apply for calls made between cellular subscribers, incoming long distance calls, call forwarding and when a cellular subscriber roams outside of his/her home region. When cellular subscribers roam in Chile, the cellular subscriber pays for the entire cost of the call, the fixed line caller does not pay an additional fee on top of the price of the local call. All operators in Chile were required to implement Calling Party Pays on May 1 and CTC and BellSouth subscribers were automatically switched to the Calling Party Pays billing method. Calling Party Pays is optional in Chile; however, Subtel reports very few people in Chile (no more than a 1,000) have continued using the Mobile Party Pays billing system.

3.3 Billing Requirements and Issues

CTC and Entel Chile are the fixed line operators in Chile and are responsible for billing Calling Party Pays calls. The interconnection agreement for Calling Party Pays was decided upon between cellular and local service operators; Subtel only approved the Calling Party Pays tariff. The Calling Party Pays rate is US\$0.21 peak, US\$0.13 off-peak, as outlined below:



Calling Party Pays Revenue Distribution, Chile



Note: **Peak hours:** Monday to Friday 8:00 AM to 6:00 PM
Off-Peak hours: Monday to Friday 6:01 PM to 7:59 AM, and all day weekends

The fixed line operator (CTC or Entel) receives the local service charge (US\$0.04 peak or US\$0.01 off-peak) while the cellular operator collects the termination charge (US\$0.17 peak or US\$0.12 off-peak).

Mobile Party Pays continues to apply to calls placed between cellular subscribers of competing operators. For calls within the same network, the operator sets the airtime rate. For example, CTC Chile charges the same rate for calls within its network as calls that terminate outside of the operator's network; which is an average of US\$0.15 per minute. BellSouth, however, implemented Calling Party Pays between its users in 1995 which continues today; a cellular subscriber that receives a call from another BellSouth user does not pay for the incoming call; the rate that the BellSouth customer who placed the call pays depends on his/her pricing plan.

For both CTC and BellSouth, there were no additional technical requirements necessary to implement Calling Party Pays. Both companies are able to offer the choice of either Calling Party Pays or Mobile Party Pays; however the majority of the operators' subscribers are using Calling Party Pays.

3.4 Difference Between Cost of Landline and Wireless Calls

3.4.1 Landline to Mobile

The Calling Party Pays rate includes both a termination charge and a local service charge; US\$0.21 (Ch\$103) for peak hours and US\$0.13 (Ch\$63) for off-peak.

Calling Party Pays per Minute Pricing (US\$, plus tax)

Origination of Call	Price	
	Peak	Off-Peak
Fixed to Mobile	\$0.17	\$0.12
PLUS		
Local Call	\$0.04	\$0.01
Total Cost	\$0.21	\$0.13

Peak hours: Monday to Friday 8:00 AM to 6:00 PM

Off-Peak hours: Monday to Friday 6:01 PM to 7:59 AM, and all day weekends

CTC

CTC charges the same rate (an average of US\$0.15 a minute) for calls made to fixed lines, calls that terminate within CTC's cellular network, or calls made to cellular subscribers outside of CTC's network. CTC cellular users may choose the long distance company for international calls, however CTC carries CTC Cellular's domestic long distance traffic.



BellSouth

BellSouth implemented Calling Party Pays between its users in 1995 which continues today. A cellular subscriber that receives a call from another BellSouth customer does not pay for the incoming call. Calls made to fixed lines or calls to cellular subscribers outside of BellSouth's network are billed at the same rate; the rate depends on the pricing plan that the cellular subscriber chooses.

3.5 Problems or Issues Reported by Carriers

3.5.1 Competitive and Technical

Neither CTC nor BellSouth experienced any technical difficulties or complaints since Calling Party Pays was implemented.

3.6 Notification or Awareness of Cost of Call

The area code (09) is assigned to mobile telephone numbers that use the Calling Party Pays system, indicating that the call will be charged a higher rate than a local call. When Calling Party Pays was implemented, the area code was added to all existing cellular numbers. No notification is given, and according to Subtel, Chileans are aware that the area code for Calling Party Pays (09) will cost more than a local call.

3.7 Subscribers and Usage

The Chilean cellular market grew 36% in second quarter 1999, the first quarter using the Calling Party Pays billing system in Chile.

Chilean Subscriber Growth, by Operator

Company	December 1998	March 1999	June 1999
Entel	185,238	231,804	431,000
CTC Startel	554,225	680,788	845,000
Bellsouth Celular	192,000	223,000	254,000
Chilesat PCS	21,875	28,036	30,600
TOTAL	964,212	1,143,502	1,560,600

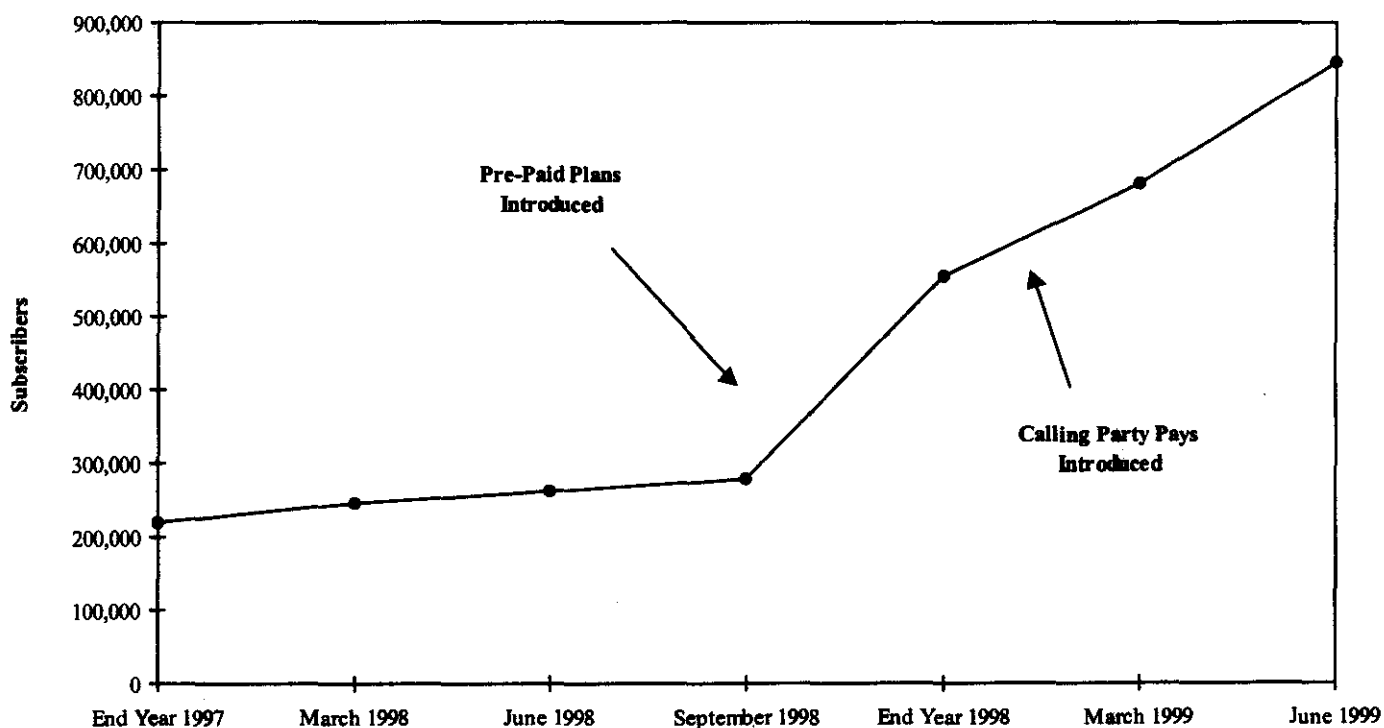


3.7.1 CTC

Users and Growth

According to Marcela Moya of CTC, pre-paid service and Calling Party Pays are responsible for the operator's subscriber growth in the second quarter 1999. As of July 1999, pre-paid customers represent 55% of CTC's cellular subscriber base. The lower price of pre-paid plans attracted new segments of population to cellular service. Calling Party Pays lowered the price of cellular service as well. Both these factors have encouraged subscriber growth over the past year (see figure below).

Cellular/ PCS Subscriber, CTC Chile: December 1997- June 1999



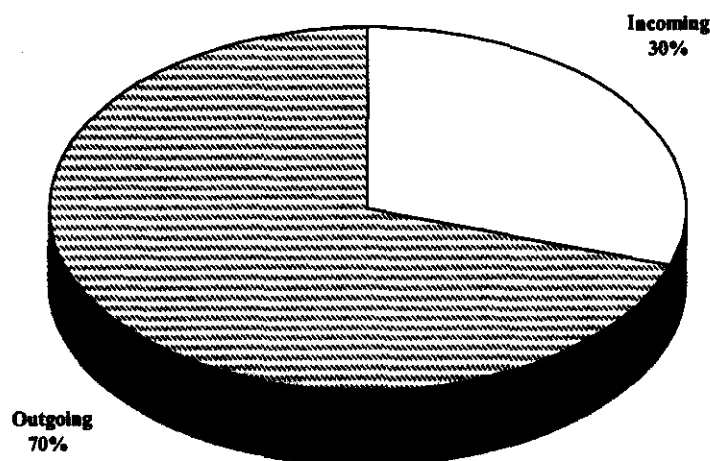
Source: The Strategis Group



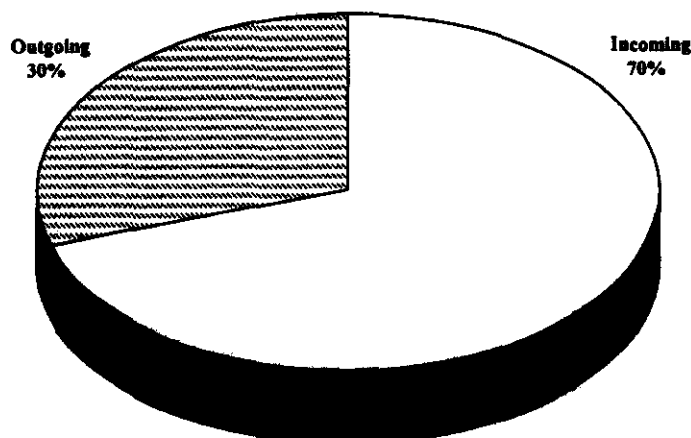
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Ms. Moya of CTC Chile feels that Calling Party Pays stimulated cellular usage as Chileans do not mind paying for a call to a cellular subscriber. She noted that Calling Party Pays stimulated usage for pre-paid subscribers and transformed the incoming/ outgoing ratio from 30% incoming/ 70% outgoing at end year 1999 to the current ratio of 70% incoming/ 30% outgoing. (see figures below).

**Incoming/ Outgoing Minutes of Use, Pre-Paid
Subscribers;
CTC Chile: December 1998 (Prior to CPP)**



**Incoming/ Outgoing Minutes of Use, Pre-Paid
Subscribers;
CTC Chile: June 1999 (After CPP)**



Contract users are less price sensitive than pre-paid subscribers and before Calling Party Pays received 40% of total minutes while pre-paid users received 29% (compared to 50% and 70% today, respectively).

ARPU's have also increased due to the increase in minutes of use; more significantly for pre-paid users due to the sharp increase in incoming minutes.

Subscribers, CTC Chile

	Users
End Year 1997	220,071
March 1998	244,183
June 1998	260,790
September 1998	278,554
End Year 1998	554,225
Calling Party Pays Launched: February 1999	
March 1999	680,788
June 1999	845,000

Usage and Revenue

Minutes of Use and ARPU, CTC Chile

	End December 1998	End June 1999
Average MOU per Month (PrePaid)		
Incoming	8	82
Outgoing	20	35
Total	28	117
Average MOU per Month (Contract)		
Incoming	88	130
Outgoing	132	130
Total	220	260
ARPU		
Pre-Paid	\$11.00	\$18.00
Contract	\$37.00	\$41.00
Total	\$24.00	\$29.50



3.7.2 BellSouth

Users and Growth

BellSouth credits the increase subscriber base over the last year due to bullish sales of the operator's pre-paid kits. Mr. Vergara feels that Calling Party Pays has encouraged pre-paid plans as subscribers no longer have to pay for incoming calls, and therefore can spend less each month for the same amount of talk time as before Calling Party Pays. He expects the majority of pre-paid subscribers in the future to receive a large portion of total monthly minutes of use. Subscriber growth for BellSouth has not increased since Calling Party Pays was implemented in Chile (see below).

Subscriber Growth, BellSouth Chile

	Users	Growth Rate (Compared to Previous Quarter)
September 1998	164,000	
End Year 1998	192,000	17%
Calling Party Pays Launch: February 1999		
March 1999	223,000	16%
June 1999	262,000	17%

Usage and Revenue

Mr. Vergara explained that there are two forces working together to determine average minutes of use per user for BellSouth's subscribers. Over the past year, cellular service (mostly pre-paid) has penetrated lower usage segments, which has decreased average outgoing minutes of use per user. Calling Party Pays, however is expected to increase incoming minutes of use in the future and overall average minutes of use per user. He feels that increasing of incoming minutes will compensate for decreasing of outgoing minutes, and bring the total average minutes of use up due to Calling Party Pays.

